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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/540,154	01/12/2006	Jeffrey Thomas Carter	118989-05072263	3341
7590 08/29/2007 Mayer Brown Rowe & Maw Intellectual Property Department 1909 K Street NW Washington, DC 20006-1101			EXAMINER GILLESPIE, BENJAMIN	
			ART UNIT 1711	PAPER NUMBER
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**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

<b>Office Action Summary</b>	<b>Application No.</b> 10/540,154	<b>Applicant(s)</b> CARTER ET AL.	
	<b>Examiner</b> Benjamin J. Gillespie	<b>Art Unit</b> 1711	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

#### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

#### Status

- 1) ☒ Responsive to communication(s) filed on 12 January 2006.
- 2a) ☐ This action is **FINAL**.                      2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

#### Disposition of Claims

- 4) ☒ Claim(s) 1-22 is/are pending in the application.
- 4a) Of the above claim(s) \_\_\_\_\_ is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-22 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

#### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

#### Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All    b) ☐ Some \* c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
2. ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- \* See the attached detailed Office action for a list of the certified copies not received.

#### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)  | 4) <input type="checkbox"/> Interview Summary (PTO-413)<br>Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | 5) <input type="checkbox"/> Notice of Informal Patent Application                       |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)<br>Paper No(s)/Mail Date <u>6/21/2005</u> . | 6) <input type="checkbox"/> Other: _____  |

*Claim Rejections - 35 USC § 112*

The following is a quotation of the first paragraph of 35 U.S.C. 112:

The specification shall contain a written description of the invention, and of the manner and process of making and using it, in such full, clear, concise, and exact terms as to enable any person skilled in the art to which it pertains, or with which it is most nearly connected, to make and use the same and shall set forth the best mode contemplated by the inventor of carrying out his invention.

1. Claims 14-19 are rejected under 35 U.S.C. 112, first paragraph, as failing to comply with the enablement requirement. The claim(s) contains subject matter which was not described in the specification in such a way as to enable one skilled in the art to which it pertains, or with which it is most nearly connected, to make and/or use the invention. There are many factors to be considered when determining whether there is sufficient evidence to support a determination that a disclosure does not satisfy the enablement requirement, and whether any necessary experimentation is “undue”. Factors include, but are not limited to:

- (A) The breadth of the claims;
- (B) The amount of direction provided by the inventor
- (C) The existence of working examples
- (D) The state of the prior art;
- (E) The level of one of ordinary skill;
- (F) The quantity of experimentation needed to make or use the invention based on the content of the disclosure.

2. Claims 14-19 are all directed towards the mechanical properties of the final polyurethane adhesive, however there is no upper limit for said properties and therefore it is difficult for one of ordinary skill in the art to definitively practice the claimed invention. Important to note is that applicants' specification does not enable the claims either, as the mechanical properties disclosed

on page 8 also fail to teach an upper limit. Upon reading applicants' claims and specification, one of ordinary skill in the art would refer to the working examples to better understand the claimed invention, however the presence of only one example, (example 2 is comparative) is not sufficient to enable the breadth of applicants' claimed ranges.

3. Although applicants have listed preferred reactants for the diol component of the polyester and polyisocyanate, there are various choices for fatty dimer acid which have not been narrowed by the claims or examples. Based on the lack of direction for the reactants and the breadth of the claimed mechanical properties the quantity of experimentation required to make the claimed invention would be exceedingly high and therefore applicants are not properly enabled for current claims 14-19. *In re Wand*, 858 F.2d 731, 737, 8 USPQ 2d 1400, 1404 (Fed Cir 1988).

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

4. Claims 1-22 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention. Firstly the language in claim 1 consisting of "An adhesive comprising polyisocyanate and a polyol comprising at least one dimer fatty acid..." is confusing because it appears that a polyol comprising one dimer fatty acid/diol and an adhesive comprising polyisocyanate are being claimed separately, clarification is required. The claim 2 is rejected because the viscosity has not been defined at a relative temperature. Claim 4 is rejected because it is not clear how a dimer can comprise a trimer. Claims 6 is rejected because "substantially" is a relative term.

5. Claims 6-8 are rejected because the terms “the diol” and “the dicarboxylic acid” lack antecedent basis. Claims 9 and 11 are rejected because no units have been provided for the molecular weight ranges. Claims 12 and 13 are rejected because it is not clear what the NCO content corresponds to, i.e. equivalents of (free NCO+urethane groups):(free NCO) or weight percent of NCO groups relative to the entire polymer. Claim 21 is rejected because an invention cannot be claimed in terms of “use” (which is nonstatutory); method claims should be employed instead. In re Fong 129 USPQ 264. Claims 14-19 are rejected because the ranges are unworkable, the values have no upper limit and currently extend to infinity.

6. Claim 21 provides for the use of an adhesive, but, since the claim does not set forth any steps involved in the method/process, it is unclear what method/process applicant is intending to encompass. A claim is indefinite where it merely recites a use without any active, positive steps delimiting how this use is actually practiced.

7. Claim 21 is rejected under 35 U.S.C. 101 because the claimed recitation of a use, without setting forth any steps involved in the process, results in an improper definition of a process, i.e., results in a claim which is not a proper process claim under 35 U.S.C. 101. See for example *Ex parte Dunki*, 153 USPQ 678 (Bd.App. 1967) and *Clinical Products, Ltd. v. Brenner*, 255 F. Supp. 131, 149 USPQ 475 (D.D.C. 1966).

### ***Claim Rejections - 35 USC § 102***

The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

8. Claims 1-6, 9-11, 13-20 are rejected under 35 U.S.C. 102(b) as anticipated by Jevne et al ('956). Jevne et al teach a polyurethane adhesive comprising the reaction product of fatty-acid based polyester diol and polyisocyanate (Abstract; col 1 lines 65-68; col 2 lines 1-7). In particular, patentees explain that the polyester is the reaction product of dimer fatty acids, such as tall oil, wherein the fatty acid may also comprise up to 20% trimer fatty acids (Col 3 lines 28-30, 50-61). Regarding claims 14-19, although there is no disclosure of the claimed mechanical values, the adhesive would inherently share the same properties based on analogous compositions. Furthermore, it has been held that where applicant claims a composition in the terms of function, property or characteristic where said function is not explicitly shown by the reference, and where the examiner has explained why the function, property or characteristic is considered inherent in the prior art, the burden is placed upon the applicant to provide clear evidence that the respective compositions do in fact differ. *In re Best*, 195 USPQ 430, 433 (CCPA 1977); *In re Fitzgerald et al*, 205 USPQ 594.

***Claim Rejections - 35 USC § 102/103***

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

9. Claims 1-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Mori et al ('996) in view of Jevne et al ('956). Mori et al teach a polyurethane adhesive comprising the reaction product of hydroxyl terminated polyester and polyisocyanate (Col 2 lines 20-25). The polyester is the reaction product of dicarboxylic acid and low molecular weight diol, specifically

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dimerized linoleic acid and ethylene and/or propylene glycol (Col 2 lines 32-44). Patentees go on to explain that the polyurethane prepolymer has a NCO content between 0.5 and 30%, and the resulting adhesive is useful in bonding wood substrates (Col 3 lines 17-20; col 4 lines 9-12).

10. Although patentees teach dimerized fatty acid as a suitable reactant for the polyester polyol, it is present among many other dicarboxylic acids with no particular specificity, however it would have been obvious to choose the fatty dimer acid in view of Jevne et al. As previously discussed, Jevne et al also teach polyurethane adhesives comprising fatty acid based polyester polyurethanes, and in particular teach that dimerized the fatty acids preferably are in the presence of no more than 20% by weight trimerized fatty acids, and what's more patentees explain that this specific composition increases the biocompatibility of the resulting adhesive (Col 1 lines 5-25). Therefore it would have been obvious to choose the dimerized fatty acid in Mori et al based on the motivation that it decreases toxicity in the resulting polyurethane adhesive.

11. Regarding claims 14-19 although Mori et al never teach the claimed mechanical values, the adhesive would inherently share the same properties based on analogous compositions. Furthermore, it has been held that where applicant claims a composition in the terms of function, property or characteristic where said function is not explicitly shown by the reference, and where the examiner has explained why the function, property or characteristic is considered inherent in the prior art, the burden is placed upon the applicant to provide clear evidence that the respective compositions do in fact differ. *In re Best*, 195 USPQ 430, 433 (CCPA 1977); *In re Fitzgerald et al*, 205 USPQ 594.

12. Claims 8 and 12 rejected under 35 U.S.C. 103(a) as being unpatentable over Jevne et al ('956). As previously discussed, Jevne et al teaches a polyurethane adhesive comprising the

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reaction product of hydroxyl-functional polyester based on dimer fatty acids and polyisocyanate, however patentees fail to specifically teach the claimed carboxylic acid/diol ratio of claim 8 or the NCO content of claim 12, nevertheless based on the disclosure of Jevne et al the claimed ranges would be obvious. Firstly, Jevne et al explains to one of ordinary skill in the art, the determination of reactants will depend on the final product desired (Col 4 lines 58-66).

Secondly, Jevne et al specifically gives an example of a fatty acid based diol which is further reacted with polyisocyanate, which results in a fatty acid based polyester-polyurethane (Col 4 lines 54-57). Based on these two statements arriving at a diol:dicarboxylic acid ratio of 2:1 would have been obvious because Jevne et al is drawn to a hydroxyl-functional polyester and it is known in the art to have excess diol relative to dicarboxylic acid when hydroxyl termination is desired. Regarding the claims NCO content, it would have been obvious to arrive at the claimed amount it has been held that where the general conditions of a claim are disclosed in the prior art, discovering the optimum or workable ranges involves only routine skill in the art. *In re Aller*, 105 UQPS 233; *In re Reese* 129 USPQ 402.

13. Claims 7, and 21-22 are rejected under 35 U.S.C. 103(a) as being unpatentable over Jevne et al ('956) in view of Mori et al ('996). Aforementioned both Jevne et al and Mori et al teach adhesives comprising dimerized fatty acid based polyester polyurethanes, however Jevne et al is silent in teaching wood as suitable bonding substrate. Nevertheless, it would have been obvious to apply the adhesive of Jevne et al to wooden materials based on the motivation that Mori et al teach wood as a suitable bonding substrates, the compositions of Jevne et al and Mori et al are analogous, and a prima facie case of obviousness arises from the expectation that



compounds similar in chemical structure will have similar properties. *In re Gyurik*, 596 F. 2d, 201 USPQ 552 (CCPA 1979).

14. Furthermore, while Jevne et al teaches low molecular weight diols such as hexanediol, patentees are silent in specifying ethylene glycol or propylene glycol in the formation of the polyester (Col 2 lines 1-2, 4; col 7 line 2). Mori et al teach that in the formation of the polyester, the diols consisting of hexanediol, ethylene glycol and/or propylene glycol are equivalent. Therefore it would have been obvious to substitute the hexanediol of Jevne et al for ethylene glycol and/or propylene glycol based on the motivation that both are drawn to analogous applications, compositions, and the mere substitution of an equivalent (something equal in value or meaning, as taught by the prior art) is not an act of invention; where equivalency is known to the prior art the substitution of one equivalent for another is not patentable, i.e. it would have been obvious. *In re Ruff* 118 USPQ 343 (CCPA 1958).

#### ***Conclusion***


15. Any inquiry concerning this communication or earlier communications from the examiner should be directed to Benjamin J. Gillespie whose telephone number is 571-272-2472. The examiner can normally be reached on 8am-5:30pm. If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on 571-272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

16. Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished

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applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

B. Gillespie

  
RABON SERGENT  
PRIMARY EXAMINER